**Unit Planner Chapter 5 Technology Differentiation Critical Thinking**

**Teacher: Solek Unit Title: Polynomial and Radical Equations and Inequalities**

|  |  |  |
| --- | --- | --- |
| **Standards / Benchmarks:** – What are the standards and benchmarks to be addressed­­­?  N 5 Selecting and using appropriate computational methods and tools  N7 Justifying reasonableness of solutions and verifying results  A1 Demonstrating the ability to translate real-world situations into algebraic expressions and equations  G6 Demonstrating deductive reasoning and mathematical justification | | |
| **Standards Analysis:**  Polynomials  •Use properties of exponents to find products, quotients, and powers of monomials.  •Perform addition, subtraction, multiplication, and division of polynomials.  •Factor polynomials.  Roots and Radicals  •Find roots of real numbers. Identify principal roots.  •Simplify radical expressions and perform addition,  subtraction, multiplication, and division on radical expressions.  •Solve radical equations.  •Simplify expressions with rational exponents.  •Define the set of complex numbers. Perform addition,  subtraction, multiplication, and division of complex numbers.  2.What students are expected to be able to do:  Multiply and divide monomial   * Add and subtract polynomials * Multiply polynomials * Divide polynomials using long division * Divide polynomials using synthetic division * Factor polynomials * Simplify polynomial quotients by factoring * Simplify Radicals * Use a calculator to approximate radicals * Simplify radical expressions * Add, subtract, multiply and divide radical expressions * Write expressions with rational exponents in radical form and vice versa * Simplify expressions in exponential or radical form * Solve equations containing radicals * Solve inequalities containing radicals * Add and subtract complex numbers * Multiply and divide complex numbers | **Critical Questions or Statements**:   1. What different techniques are used to factor polynomials, and what strategies can be employed to determine which factoring method to use? 2. What are irrational numbers? How do we write radicals in simplest form? | **Relevance:**  Profit project helps students to relate solving equations with square roots to accepting a job. |
| **Pre-assessment tools / strategies:**   * Informal assessment of skills * Getting started assignment from page 221 # 1 – 18 * Online self check for previous lesson * 5 minute opener posted online with drop box | **Differentiation strategies:**  Choice--Students will select 10 problems from Skills 5-3 and Skills 5-5 worksheets.  The project allows for students to answer questions at their level of knowledge. Students may elaborate and are encouraged to go above and beyond to answer the question in their letter of acceptance.  Tiered assignments |

|  |  |
| --- | --- |
| **Final Assessment(s) - Body of Evidence**  Test 5A  Monomials  Polynomials  Test 5B  Simplifying Radical Expressions  Conservation Project | **Instructional Strategies:**  1. Example problems presented by teacher via white board  2. Example problems presented by teacher via powerpoint  3. Graphic Organizer posted on Edline for guided note taking on power point.  4. Guided practice problems in class using computer One Note  5. Students present examples using overhead projector  6. Guided practice problems in class using white board  7. Group work in class –competition to study for test  8. Individual work at home |
| **Formative assessments / assignments**   1. Keep a journal naming the steps for examples worked throughout this chapter; 2. p.226 # 18 – 32 3. Skills Practice 5-1; p. 227 # 33 – 55 ; 4. p. 231 # 17 – 33; 5. Practice 5-2 6. p. 232 # 37 – 46 7. Quiz 8. Skills 5-3 9. p. 236 – 237 # 15-35 odd 10. p. 236-237 # 16 -34 even ; 11. p. 242 # 15 – 28 12. p. 243 # 29 – 38; Skills 5-4 13. Review pages 276 -278 # 1 – 34 14. Quiz 15. Skills 5-5 16. p. 248 # 21-39 odd 17. p. 254 # 15- 30 18. p. 254 # 35 – 36 19. Skills 5-6 20. p. 261 # 21- 40 21. p. 261 # 41- 60; Skills 5-7 22. 7. p. 266 # 13 – 28 23. Quiz 24. Skills 5-8 25. Practice 5-8 26. p. 274 # 18- 35 27. p. 274 # 48 – 54 28. Skills 5-9 29. Quiz 30. p. 278-280 # 35 – 75 | |